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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/857,912	06/11/2001	Yasuhiro Iijima	113197-010	2711

24573 7590 05/06/2003  
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EXAMINER
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COOKE, COLLEEN P

ART UNIT	PAPER NUMBER
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1725

DATE MAILED: 05/06/2003

6

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	09/857,912	IIJIMA ET AL.
	Examiner	Art Unit
	Colleen P Cooke	1725

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

**A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.**

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) Responsive to communication(s) filed on 07 April 2003.

2a) This action is **FINAL**.      2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4) Claim(s) 1-6 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1-6 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>3.5</u> .	6) <input type="checkbox"/> Other: _____

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 4, and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Iijima et al. (JP 11-053967).

Iijima et al. teaches a superconducting structure including a polycrystalline metallic substrate, a polycrystalline thin film which may be  $Y_2O_3$ , and an oxide superconducting layer (see Abstract of provided translation, particularly paragraph under “Solution”) and also that the grain boundary inclination angles of different grains in the polycrystalline thin film along a plan parallel to the film forming surface of the substrate are controlled are about 30 degrees or less (see paragraph 005 of provided translation).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iijima et al. (JP 11-053967), in view of Iijima et al. (EP 0872579) [hereinafter referred to as Iijima EP for clarity].

Iijima et al. teaches the structure as described with respect to claims 1, 4, and 5 above. Additionally, Iijima et al. also teaches the processing to form this superconducting structure, which includes using an ion beam of  $Xe^+$ ,  $Kr^+$ , or a combination (paragraph 0017), with an incident angle of the ion beam set from 50-60 degrees (paragraph 0016 and 0020). Furthermore in a specific example, Iijima et al. teaches that the energy of the ion beam used is 300V. Iijima et al. is silent as to the temperature of the polycrystalline substrate during the process.

Iijima EP discloses a process for preparing a polycrystalline thin film similar to that of Iijima et al., including a similar degree of orientation of crystal grains, ion beam incidence angle, and ion beam source. Iijima EP also teaches that the substrate be maintained at a temperature of not more than 300 degrees (page 3, lines 28-40).

Iijima et al. and Iijima EP are analogous art because they are from the same field of endeavor, which is ion beam assisted deposition processing to form oxide superconductors on polycrystalline thin films on polycrystalline metallic substrates. It would have been obvious to modify the process of Iijima et al., which is silent as to temperature by using a temperature as taught by Iijima EP because Iijima EP teaches essentially the same process as Iijima et al. and that using the temperature taught produces a thin film with superior orientation (page 3, lines 47-49).

***Conclusion***

Any inquiry concerning this or earlier communications from the examiner should be directed to Colleen Cooke, whose telephone number is 703-305-1136. She can normally be reached Monday-Thursday from 7:15-5:45pm.

If attempts to reach the examiner by telephone are unsuccessful, her supervisor, Thomas Dunn, can be reached at 703-308-3318. The official fax number for the organization where this application or proceeding is assigned is 703-305-6078. The unofficial fax number for this examiner is 703-746-3048.

Any inquiry of a general nature relating to the status of this application or proceeding should be directed to the receptionist, whose telephone number is 703-308-0661.

CPC 5/1/2003



TOM DUNN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700